

THE ART OF

MEDICINE

at the 21st Century

Mary H. Lazar



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ARTIST/AUTHOR

May H. Lesser, the daughter, sister, wife and mother of physicians, is a graduate of the H. Sophie Newcomb College, Tulane University, with honors in drawing. She studied anthropology at Columbia University and child psychiatry at the Johns Hopkins University. She received a master's degree in painting from the University of Alabama and did further graduate work at UCLA. She was granted the Tiffany Graphics Art Award and taught printmaking at the UC, Irvine.

She, as an artist, has had the

rare experience of being "on-the-inside" of the medical centers of UCLA, the University of Southern California and Tulane University. Her work has been exhibited at UCLA, and UC, Irvine, Tulane University and Louisiana State University, the University of Miami, the University of Southern California, Case Western Reserve University, the Seattle Museum of Art, California State College at Long Beach, the Detroit Institute of Art, the Smithsonian Institution, the University of Pittsburgh, the National Academy of Design, the

George Washington University, the Clinical Center of the National Institutes of Health, and the National Library of Medicine.

Her etchings and drawings are in the permanent collection of the Weatherspoon Gallery, the University of North Carolina, the Oklahoma Art Center, the ARS Medica Graphic Art Collection at the Philadelphia Museum of Art, the Grunwald Graphic Art Foundation at UCLA, the Darling BioMed Library of UCLA, the Calder Medical Library of the University of Southern California, the New

Orleans Museum Art and the National Library of Medicine. She published two books, *The Art of Learning Medicine* (Appleton-Century-Crofts, N.Y., 1974) and *An Artist in the University Medical Center*, (Tulane University Press, N.O., 1989), which won the Best Art Book of 1990, Mary Ellen Lopresti Publication Award of the Southeastern Art Librarians Association. Her color etchings and drawings have appeared on eleven covers of the *Journal of the American Medical Association*.

"PEDIATRIC NEPHROLOGY CONFERENCE"
Ink drawing with tempera,
29.5"x39"

The chief of the pediatric nephrology section is with his staff for a conference about inpatients at the university medical center. A large group involved in the treatment of children - nurses, social workers, physical therapists, nutritionists, dialysis specialists, and kidney transplant administrators - discuss the week's progress of each child in the unit. "Dialysis can be done at night. With peritoneal dialysis one can hook oneself to the machine and in the morning go to school. Transplantation has improved markedly. Cyclosporin really changed that world, and the survival of kidney grafts has increased remarkably," the physician reports. "Years ago the staff caring for children with failing kidneys would often lose their bearings with the hopeless suffering and deaths. Today this is a cheerful, upbeat meeting."





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This is my fourth exhibit over the last 20 years in a series presenting medicine and social healing in our century. When I reviewed my first book, from which the first exhibit was taken (auditing medical school at UCLA, with the Class of '71), and the second, about medical education in its entirety (from the student's first days until a physician's first professional experiences, in the '80's), I realized that another look was timely. I have always focused on the motivations of health care practitioners, as well as their human endeavors. I admire those who study and train to help others at this high level of knowledge and skill, which takes years to achieve and much personal sacrifice. And even with today's technologies and mechanical devices, the traditions of nurturing and intimacy are still here. So again, I show the human side of medicine through images of these physicians at work in their research laboratories, by their patients' bedside, in the operating room, and at conference and studies, but now aided with new knowledge. There is an enormous amount of creative energy

expended in healing and dealing with the medical enigmas of life.

I place these 27 drawings on a balance sheet of "miracles" and "deficits": We are beginning to understand recombinant gene therapy. We have MRI for diagnosis, drugs and machinery to aid surgery for transplanting organs and to repair the hearts of newborns and to keep the very young and old alive. Worldwide medical computer programs extend knowledge. But, we have a darker nature: we have crises in emergency rooms due to guns, child abuse, alcohol and drugs. We have an epidemic rise of AIDS, low birth weight and crack babies, many of whom will be permanently damaged. In my home city, one-third of the children receive only emergency medical care and one fourth live below the poverty line, breeding crime and illness. How we treat the defenseless among us, the ill, the very young and old, the poor, is as much a measure of the greatness of our civilization as our vaunted discoveries. We have come to know a lot more than we have implemented.

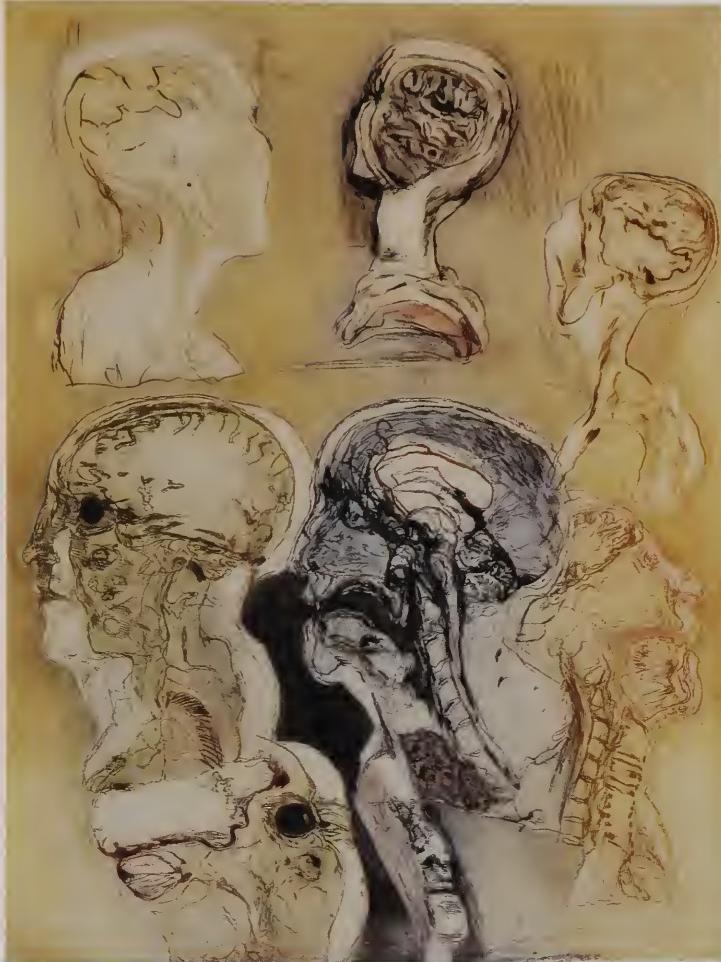


"THERAPEUTICAL APHERESIS"
Ink drawing with tempera, 29"x39"

I draw a very ill young woman in the Department of Transfusion Medicine at the National Institutes of Health. The apheresis treatment has failed twice. She is smiling and laughing! "Why is she laughing?" I wonder what she has to laugh about! Then I realize that she is viewing a comedy film on the tiny

television set over her bed. How kind – she has an hour's release from worrying. The chief surgeon of the National Cancer Institute, who is this patient's doctor, tells me about a similar patient who wrote a little essay that started with "I died today." The poem talked about how she wasn't going to see her children grow

up. "It was poignant and so sad because it was true. It keeps your priorities in order when you are doing the kind of research that I do. We never forget why we are doing it," the doctor said.



"SAGITTAL SERIES 1/10"
Intaglio etching, 18" x 24"

"MAGNETIC RESONANCE

IMAGING, 3-D"

Dry point engraving,
with tempera, 12" x 15"

In the freshman anatomy course at UCLA, in 1967, I etched a plate of a sagittal series of the head, sections of the human head embedded in plastic blocks, like book ends. The center cut was in the middle of the plate and at the bottom of the plate is the face of a man, joined with its side view meeting at the eye, the inside of the eye and the outside. I wrote for the book, "The Art of Learning Medicine," "The beauty of the original structures caused me to have a sense of intimacy:

what could be more personal than to see the inside of a human head and hold it in one's hands and turn it over and see it this close to me?" I feel the same sense of wonder when I incise the copper plate to make this engraving of an MRI film in 3-D today. The means to learn by seeing clearly the many levels inside an alive human being, quickly and without pain or danger to him, is a pivotal contribution from radiology. Its beauty is awesome.





"NOT ONE MILLIMETER OFF"
Ink drawing with tempera,
22"x29.5"

The pediatric thoracic surgeon is reimplanting coronary arteries to establish a normal blood flow in a newborn. He cautions his resident that one millimeter off can cause lifetime damage. The baby is on a blood pump for 45 minutes. The intravenous drip is nitroprusside, 105 micrograms per kilogram per minute of dopamine. Ampicillin is the chosen antibiotic. An instrument monitors the circulation. "If there is too much, it makes the heart work harder than it has to work. What we want to do is to try to make the heart before, during and after the operation, work as little as it has

to, to do exactly what it needs to do." I question the size of the instruments; they look so bulky compared to the small and delicate baby. "The handles can be somewhat bigger but the tips are somewhat smaller, absolutely special instruments for babies."

During the procedure, the professor quizzes the resident and medical student on the cardiopulmonary anatomy.

"21 YEARS WITH CYSTIC FIBROSIS"
Ink drawing with tempera,
21.5"x29"

The pulmonary pediatrician proudly asserts, "During my lifetime we have learned to detect the gene that carries the cystic fibrosis disease. It can be seen in the newly fertilized egg and in the fetus *in utero* – whether the baby will have C.F. or be a carrier like his parents. And then, in the newborn, with the disease, we are experimenting with gene therapy, inserting the normal gene via a virus to line the airways, attaching where the chromosome should be. But we still have patients with the disease."

He reviews the heavy chart of one who has been his patient for

21 years, now with an oxygen box by his feet. The sickly thin young man reports that he does not sleep well at night. "From pain?" his doctor asks. And so he writes a prescription for medication. After the consultation, I ask the doctor, about to retire at 70, what it did to him to go to his patients' funerals all of his medical career. He answers, "Being at the death bedside is harder, when you have known the patient for decades."



"WAITING FOR A NEW HEART"

Ink drawing with tempera,
21" x 29"

The nurse in the premature intensive care unit says, "I would say that hope is the main ingredient, for the parent and for the whole family. Here are the real sick ones. A baby is being scheduled for surgery to replace some valves in the heart that go the wrong way. The baby in the back is being operated on this afternoon for something the matter with his intestines." It is a very quiet sick room. The neonatologist has rounds with her medical students and interns, going from one isolette to another. The baby in the drawing is now 26 weeks old. The twin brother, on the right, weighs even

less and is hydrocephalic and has a shunt. The nurse wonders, "How can the mother, with three older children, take care of this baby even if he could get up to five pounds here?" His scrawny legs jerk in spasm, his arms protrude from the edge of the towel, even the minuscule perfect fingers and toes toed, wired and corered, proclaim that he, too, is a human being.



"NOTHING WILL EVER HAPPEN TO THEM!"

Ink drawing with tempera,
19" x 24"

An internist, who specializes in adolescent medicine, is at the HIV Positive Clinic for Teenagers. She describes the rise of AIDS in these young patients as a coupling of many factors. The teenagers' personal identity shifts from having their identity defined by their parents to that of their own. They feel invulnerable, that nothing will happen to them. Their reckless behavior is influenced by the portrayal of sex and violence on television with a double message; "It is bad, it is tantalizing." We lack a lot of good things for poor kids to do; we do not have enough gyms and swimming pools and scout programs." She pleads, "Now why can't society see clear to make condoms a part of hygiene,



like washing your hands to stay clean and healthy. It is beyond me. We need to try to protect them from getting a disease that they can't overcome!"

In this clinic cubicle, the 19-year-old who is HIV positive reports to the internist that the AZT tablets are not doing anything for her. She has to get out of her mother's house . . . "It doesn't have any heat, anyhow!" She has nowhere to go and she has no money. The doctor gives her directions to a homeless shelter and a new prescription. The consultation is all the more painful because the young patient is very bright and the inevitability of death is not mentioned by her or her doctor.



"ONE OUT OF NINE"

Ink drawing with tempera and pastel,
24.5" x 37"

The radiologist views a mammogram on the light box and holds her loupe at a cyst in the breast, as she dictates her findings into the tape recorder. "If we find some abnormality, particularly a mass or group of calcifications that might be malignant, we suggest that the surgeon biopsy. If it is less than 8 cm. in diameter, the outcome is very, very good. One out of every nine women, in a lifetime, will have cancer of the breast." The young intern in the doorway is fearful; she knows that there is no prevention, only early detection, and radiation and surgery, the only treatment.



"STRATEGY FOR RADIATION"

Ink drawing with tempera,
22" x 29"

The physicist and a radiology resident who is assigned for an hour to learn about planning oncology radiation are at the computer. The computerized axial tomography film is on a digitizing pad. Internal structures, including tumor volume are input into the computer, which reconstructs the film image into numerical descriptions and displays this on the screen. Once the computer has the patient's contour, the physicist can call up beam data and see how the radiation can be distributed in that patient. This plan for treatment is used as a blueprint. A simulation of this plan with x-rays verifies the strategy before the patient is treated. The resident was so intrigued by this careful and advanced procedure that she stayed much longer than she had intended.

"PEPTIDE SYNTHESIZATION"

Ink drawing with tempera,
29.5" x 40"

In the university medical center, the chemist monitors the synthesis process in a peptide study. The chief of the laboratory prizes the beauty of American academic research system, "We just don't realize what we have got here, complete freedom to work on any project that we want to!" He discussed his work today. It has been 10 years since I had drawn technician in his laboratory. "Quantitative things are better. We know lots more today about what these things are doing when they bind to the cell in terms of triggering intracellular processes. We are beginning to be able to understand a lot about recessive molecules, characteristic structure, function. So we have a lot

more approaches to a particular problem. We know all this ties into molecular graphics. We can figure out three-dimensional structures of both the small and large molecules as a receptor from two different directions. We can create a drug."

"We are doing a fair amount of work in the cancer area and yes, in fact, we're doing something that could be classified in the metabolic area - that is a growth hormone agent. It has an effect on metabolism, it is aimed at restoring growth hormone levels in elderly people. The older you get, the more you tend to have abnormal growth hormone levels. This translates into all kinds of physical problems potentially. If you can reconstitute growth hormone levels in a younger person, then some benefits might arise also for the elderly . . . to maintain their muscle mass longer."



"BRONCHOSCOPY"

Ink drawing with tempera,
28" x 34"

The laryngologist knows that patients who have a cancer of the lungs, throat, esophagus or mouth caused by smoking have a significantly higher chance of developing a second cancer in the same areas. This patient, who has a throat cancer, is undergoing bronchoscopy to ensure that there is not a second cancer in the lung area. A scope is inserted with an attached television camera into the trachea and all eyes are focused on the image on a monitor. We are anxiously viewing the tunnel shaped esophagus and finally see a tumor attached to its side.



"MRI FILM OF AN AIDS PATIENT"

Ink drawing with tempera,
30" x 39"

The neuroradiologist studies the MRI films of a 34-year-old man, an inpatient at the university medical center, whose AIDS virus has invaded his spinal cord and his brain. He advises the primary physician in his report to have a biopsy of the cerebellum. He turns to me, "It will take \$300,000 to keep him alive for a year and who has \$300,000?" He tells me that he, himself, is married and has a son, that the patient is from out-of-town, from San Francisco. I smile to

myself, as if there are no such patients native to New Orleans. I notice that when the physician can do something for a patient, he seems to move closer to that patient. Here the reverse appears. In our recent past, before drugs, mental patients were kept away in hospitals out in the woods, and the caretakers distanced themselves from the patients. Today the young doctor kept his distance for emotional safety.

"THEY JUST MELTED AWAY"

Tempera and oil on plastic,
36" x 43"

"He had a large amount of melanoma that was covering this entire part of the chest wall with multiple nodules and they just disappeared, not long after we started the treatment, probably the third or fourth day." The chief of surgery at the National Cancer Institute feels the chest of his patient, the nurse alongside the therapeutic infusion monitors the drips . . . the tableau was eloquent in its simplicity.





"ENZYME REPLACEMENT"
Ink drawing with tempera, 21.5" x 29"

At a public hospital in New Orleans, I drew two small boys, placid yet frightened, receiving enzyme replacement for Gaucher's Disease. The drug costs about \$120,000 a year and is given to them by the pharmaceutical company who made the discovery. It is a small intimate room, the intravenous drip was

going well and the nurse began to share her thoughts with me. "I just came back from Romania. I went with Catholic Charities to teach sterile nursing techniques, but when I got there, there was nothing to keep sterile . . . no equipment, no food, no nurses, no diapers. It was so much worse than what

was seen on television." She tried to reconcile poverty and human waste there and the modern research and its cost for the boys here. There is no answer.



"100 TO A BOTTLE"
Ink drawing with tempera on plastic, 30" x 40"

Alongside the National Institutes of Health and the university medical centers, the private pharmaceutical companies contribute valuable research to medical progress. I studied at one company the development of a new drug to combat AIDS, which has cost millions of dollars and a decade of time to perfect. It is a compound that acts on the receptor of the AIDS virus cell and is activated by latching on to that receptor as soon as

it binds with that cell, releasing an endotoxin that will kill the cell locally. I had followed the complete development of this drug, through various laboratories of high technology microscopes and computers and finally it is being pressed into tablets in an old machine that I am assured is still the best to use. It adds a human touch to the invisible-to-the-human-eye-work done in all stages before this one.

FRONT COVER:

**"WORLD WIDE
DISSEMINATION OF
MEDICAL KNOWLEDGE"**
Ink drawing with tempera,
36" x 43"

In the rotunda of the National Library of Medicine, health scientists and students have access to current, uniform and accurate medical information. This world wide communication system cuts across national boundaries enabling as a nucleus, this group to be joined together in a library without walls. On the right of the computers is the reading room with its circulation desk, shelved books with call numbers on their spines, and portraits of the former directors of the Library. The surgeon who first served as director of the Army Medical Library 130 years ago has on academic red robes. There is an exhibit of Ellis Island on the other side of the computers. The first NLM Director had a hand in inventing the punched card used in tabulating statistics. The immigrants at Ellis Island were catalogued on such cards, documenting their origin, age and sex. These were a precursor of the modern computer.

The Library thanks the Chairmen of the Departments of Radiology, Pediatrics, Surgery and Medicine at Tulane University Medical Center, the Chairman and C.E.O. of The Upjohn Company, the Chiefs of the Department of Transfusion Medicine and of the Surgery Branch of the National Cancer Institute, N.I.H., for their cooperation in this project. The Friends of the National Library of Medicine produced this brochure with funds provided by The Upjohn Company. Copies may be obtained by writing The History of Medicine Division, National Library of Medicine, 8600 Rockville Pike, Bethesda, MD 20894.

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